

REMARKS

Claims 20-28 are pending and stand ready for further action on the merits. Support for the amendment to claims 20 and 21 can be found on page 8, lines 13-14 and page 9, lines 9-15 of the specification. No new matter has been added by way of the above-amendment.

Issues Under 35 U.S.C. §103

Claims 20-28 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP 61-1108700 (hereinafter JP '700) in view of Lohr et al., U.S. 4,347,151. Applicants respectfully traverse the rejection.

The Present Invention and its Advantages

The present invention relates to a detergent-impregnated article and a method for cleaning a hard surface using said article. Said article comprises a base body impregnated with a detergent, wherein the detergent comprises solid abrasive particles, a protective layer-forming component and water. This detergent is impregnated in the base body of the article.

The solid abrasive particles contained in the detergent are relatively soft and have a pencil hardness of 6B to 9H. In using these soft particles, the detergent-impregnated article can be used without damaging or scratching the hard surface during cleaning. The solid abrasive particles are present in the

detergent in an amount of 1 to 10% by weight and consist of organic polymer particles and/or inorganic particles. These solid abrasive particles help to remove the dirt from the hard surface to be cleaned by mixing with the dirt as the impregnated article is wiped over the hard surface, thereby releasing the dirt from the surface in a powdered state. In addition, the protective layer-forming component is released from the impregnated article and forms a protective layer on the hard surface which has been cleaned. This protective layer imparts a stain resistance to the surface.

The present inventors have shown that including the soft abrasive particle in the detergent-impregnated article, gives the article improved properties which would not be expected based upon the art. Specifically, the following table shows the difference in the effect of using a detergent-impregnated article which contains soft abrasive particles versus the detergent-impregnated article which does not contain these soft abrasive particles.

Table^A

	Dynamic Friction Coefficient in Wiping	Degree of Streaks (Gloss)	Static Friction Coefficient of Cleaned Surface	Degree of Staining (%)
Example 1	0.20	114	0.25	17
Comparative Example 1	0.50	110	0.30	21

A = The data can be found on page 31 of the specification.

As can be seen from the above Table, Inventive Example 1 which contains the solid abrasive particles, has an improved dynamic friction coefficient in wiping, degree of streaks, static friction coefficient of cleaned surface and degree of staining over Comparative Example 1 which does not contain the solid abrasive particles. Such an improvement would not be expected based on the prior art.

The above-explanation of the present invention and its advantages has been provided for the Examiner's benefit to help the Examiner appreciate the patentable distinctions between the present invention and the cited references.

Distinctions Over the Cited Art

JP '700 discloses a wet wiping material comprising a web impregnated with a liquid material comprising plant gum, a surfactant having cleansing power, silicone oil, ethyl alcohol and water. The wet wiping material is taught to be used to clean "things soiled by oil in daily life or oil dirt evolved in industry". To meet this objective, JP '700 incorporates surfactants which have a high ability to dissolve or decompose oily spots. The degree of dissolution of oily spots is evaluated in each of the working examples of JP '700. The oils that were evaluated include a mixture of soybean oil and beef tallow and a mixture of machine oil and grease oil.

Thus, JP '700 has prepared the cleaning article in such a way as to target the removal of oily stains and JP '700 fails to teach

or suggest the removal of soil and dirt by the action of solid abrasive particles as presently claimed.

As noted above, the inventive detergent-impregnated article has distinct advantages over the article of JP '700, since the inventive article includes solid abrasive particles. Based on the experimental evidence in the present specification, a detergent-impregnated article containing the solid abrasive particles, as presently claimed, has: 1) improved dynamic friction coefficient in wiping; 2) degree of streaks; 3) static friction coefficient of cleaned surface; and 4) degree of staining, over the detergent containing articles that do not have solid abrasive particles. It is therefore believed that the cleaning mechanism of soil or dirt in JP '700 is entirely different from that of the claimed invention. This distinction in cleaning mechanisms is manifested in the difference between the composition of the inventive cleaning article and the composition of the article of JP '700.

The Examiner, aware of the deficiencies of JP '700, cites Lohr et al. to cure the deficiencies. Applicants respectfully submit that Lohr et al. fail to cure the deficiencies of JP '700.

Lohr et al. disclose a cleaner polish for kitchen and bathroom surfaces. The cleaner polish contains a surfactant, an abrasive agent, dimethyl silicone fluid, isoparaffinic hydrocarbon, a polymer and water. As described in column 2, lines 47-56 of Lohr et al., the abrasive agent is optional and, if present, the abrasive agent is formulated in a relatively large

amount of 10 to 15%. With this range of the abrasive agent, scratches are likely to occur on the surface to be cleaned.

In contradistinction, the presently claimed invention includes solid abrasive particles which mix with dirt in a way that does not vigorously abrade the surface while also releasing the dirt from the surface in a powdered state. To this end, the inventive solid abrasive particles have a relatively low hardness and are present in a relatively small amount. It would be clear to the skilled artisan that the dirt is not released in a powdered state by the cleaner polish of Lohr et al.

Thus, significant patentable distinctions exist between the claimed invention and the disclosure of Lohr et al.

The Examiner alleges that the claimed invention is unpatentable over the combination of JP '700 and Lohr et al. As stated above, however, JP '700 fails to teach or suggest the use of solid abrasive particles, and Lohr et al. teach the use of higher amounts of solid abrasive particles than is used in the claimed invention. In addition, Lohr et al. fail to teach or suggest the removal of dirt by releasing it in a powdered state.

Also, it is clear from column 2, lines 47-56, that Lohr et al. incorporate the abrasive agent to assist in the removal of "stubborn soils". Accordingly, the skilled artisan would be motivated to add a high concentration of the abrasive agent, since Lohr et al. seem to imply that increasing the concentration of the abrasive agent would decrease the work necessary to remove a stain.

In view of the foregoing, Applicants respectfully submit that the presently claimed invention is not made obvious by the combination of JP '700 and Lohr et al. Accordingly, withdrawal of the rejection is respectfully requested.

Conclusion

In view of the above-amendments and comments, Applicants respectfully submit that the claims are in condition for allowance. In the event that the Examiner finds to the contrary, Applicants respectfully request that the Examiner enters this Amendment into the official record to place the claims in better form for appeal.

Applicants have attached hereto a marked up version of the claims to show the changes made for the Examiner's convenience.

If the Examiner has any questions concerning this application, he is requested to contact the Garth M. Dahlen, Ph.D. (#43,575) at the offices of Birch, Stewart, Kolasch & Birch, LLP.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

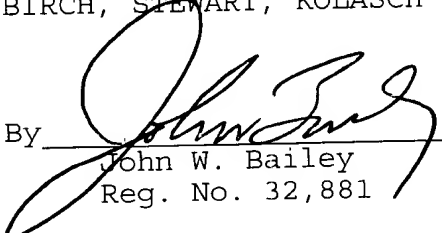
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overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims have been amended as follows:

20. (Amended) A method for cleaning a hard surface comprising the steps of:

wiping a hard surface to be cleaned with a detergent-impregnated article comprising a base body and a detergent impregnated in said base body to apply said detergent to said hard surface and to release dirt from said hard surface, and then wiping said hard surface with a wiping sheet to remove said dirt and said detergent and to form a protective layer on said surface, and

wherein said detergent-impregnated article contains 50 to 5,000% by weight of said detergent, and said detergent comprises solid abrasive particles having a pencil hardness of 6B to 9H and are present in the detergent in an amount of 1 to 10% by weight, a protective layer-forming component and 50 to 98.9% by weight of water.

21. (Amended) A detergent-impregnated article comprising a base body and a detergent impregnated in said body, said detergent comprising solid abrasive particles having a pencil hardness of 6B to 9H and are present in the detergent in an amount of 1 to 10% by weight, a protective layer-forming

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component and 50 to 98.9% by weight of water, and said base body containing 50 to 5,000% by weight of said detergent.